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RESOLVING FAILED BANKS: THE U.S. S&L EXPERIENCE

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ABSTRACT

This paper provides an overview of the savings and loan (S&L) crisis in the United States and the resolution experience of U.S. regulatory agencies. The focus is on the effectiveness of alternative resolution strategies and on some critical regulatory responses--forbearance and inadequate supervision --that, in retrospect, magnified the costs borne by taxpayers. Adding to its direct interest, the United States' experience is a valuable source of information for other industrial countries facing similar banking crises, as financial innovation and liberalization expose their banking industries to the systemic problems confronted by U.S. regulatory agencies during the past fifteen years.

KEY WORDS: RTC; FSLIC; Savings and loans; Thrifts; Bailout

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I. Introduction

The insolvencies of large numbers of S&L's in the United States during the 1980's and the consequent resolution process have been the most costly financial resolution in U.S. history. This paper provides an overview of the savings and loan (S&L) crisis in the United States and the resolution experience of U.S. regulatory agencies. We focus mainly on the effectiveness of alternative resolution strategies adopted by the regulators and on regulatory responses that, in retrospect, magnified the costs borne by taxpayers. Adding to its direct interest, the U.S. experience is a potentially valuable source of information for other industrial countries that may face similar banking crises as financial innovation and liberalization expose their banking industries to the systemic problems confronted by U.S. regulatory agencies during the past decade.

The S&L crisis in the United States was caused and magnified by two episodes of adverse shocks that originated outside the industry. 1/ First, in the late 1970s, a sharp increase in short-term interest rates drove the cost of funds above the interest rates that U.S. S&Ls were earning on their portfolios of fixed-rate mortgages. Second, between 1987 and 1990, the S&L industry was forced to book losses that were attributable both to depressed real estate markets and to other problems--for example, the presence of junk bonds--with the quality of the assets in S&Ls' portfolios. 2/

The external shocks that impinged on U.S. S&L capital levels have clear counterparts in several other industrial countries. Depressed real estate markets and credit losses, for example, were major causes of the recent banking troubles in three Nordic countries (Finland, Norway, and Sweden) and in Japan. 3/

More generally, higher levels of interest-rate volatility since the late 1970s have increased the exposure of banking systems in many industrial countries to interest-rate risk. The higher volatility is unlikely to subside in the future because it partly reflects a trend toward deregulation and removal of direct interest-rate controls by central banks. Moreover, financial innovations and the growth of non-intermediated finance are likely to erode the banks' near monopoly in some traditional areas of business and, thus, their profitability.

1/ The thrift industry includes S&L's and savings banks, both of which took in share deposits withdrawable on short notice and engaged in longer term real estate lending.

2/ These problems did not subside until 1992. The thrift industry as a whole, however, had profits totalling \$1.82 billion in 1991 and \$5.14 billion in 1992.

3/ See Goldstein and Folkerts-Landau (1993).

In addition, as we elaborate below, the United States' resolution experience is relevant for other industrial countries because it identifies several regulatory responses that can increase the resolution costs imposed on taxpayers by banking crises. In particular, U.S. regulators did not act promptly to close insolvent S&Ls in the early 1980s. With their tangible capital already eroded, many S&Ls had an incentive to engage in excessive risk taking. The flat and underpriced premiums charged for deposit insurance and the absence of risk-based capital requirements created a moral-hazard problem: if the risky activities paid off, the S&L would recover part of its capital; if they did not succeed, the insurance fund would bear the cost. The S&Ls whose risky assets did not pay off suffered substantial losses, several times larger than total industry losses; and taxpayers ultimately covered these losses.

In what follows, Section II provides some background on the United States S&L crisis and its resolution. Section III analyzes the regulatory responses that added to the government's resolution costs. Section IV discusses the resolution policies adopted in 1989, and their implementation by the Resolution Trust Corporation (RTC). Section V outlines the RTC's asset-management and sales methods. Section VI discusses the RTC's funding and resolution experience. Section VII contains some concluding remarks.

II. The Savings and Loan Bailout

On December 17, 1993, the passage of the RTC Completion Act authorized the Treasury to deliver to the RTC a final \$18.3 billion to wrap up the S&L resolution process. By December 1995, when the sunset provisions of its authorizing act required the RTC to close its doors, it had spent only \$4.6 billion of this appropriation. These final expenditures brought the total cost of the S&L insolvencies to about \$145 billion.

For comparison, at the end of 1981, the S&Ls had \$659 billion in assets. In 1993 dollars, these assets had a total book value of \$1.3 trillion. Thus, by the end of 1995, the overall cost of the bailout had accumulated to about 10 percent of the end-1981 assets in 1993 dollars. ^{4/}

Official estimates of the total cost figure had escalated

^{4/} The overall cost is an estimate, though it is now probably close to its final value. The total cost figure is comprised of cash outlays by the FSLIC and the RTC over many different years and so requires the calculation of the present value of the expenditures. For example, the FSLIC had expended more than \$17 billion directly by the time it ceased operation in 1989, and the RTC made the bulk of its expenditures in 1990, 1991, and 1992.

and fluctuated significantly over the years. ^{5/} In 1988, for example, the size of the resolution cost was estimated at about \$120 billion. Later projections by the Congressional Budget Office (CBO) had put the final bill for the S&L crisis at \$215 billion in 1990 dollars. ^{6/} By 1993, the estimate had settled at about \$150 billion, and further large increases were unlikely because the RTC had already removed the most poorly capitalized S&Ls from the industry. In the end, the final appropriation of funds in 1993 proved mostly unnecessary.

The resolution of S&L failures contributed significantly to the rapid pace of consolidation in the industry. Over 1600 S&Ls were closed and resolved by federal regulators between 1980 and the end of 1995. ^{7/} The number of closures amounts to about 40 percent of the nearly 4000 operating S&Ls insured by the Federal Savings and Loan Insurance Corporation (FSLIC) at year-end 1980. Most of the resolutions had occurred by 1992. At the beginning of 1993, 84 institutions were in conservatorships, and 64 were in conservatorship in November 1993. At the start of 1993, about 85 other institutions were expected to fail during 1993, and another 100 were in severe financial distress. Of these, the RTC resolved 27 in 1993, 64 in 1994, and only 3 in 1995. The final resolution of the S&L crisis entailed yet greater consolidation either through a continuation of voluntary mergers and acquisitions or through more government closures.

By the early 1990s, the U.S. S&L industry had bifurcated into a group of profitable, well-capitalized S&Ls with long term economic viability and a second group of financially troubled institutions. Based on CBO estimates of the market values of S&L assets, the viable group included only 1300 to 1500 institutions at the end of 1991, and these institutions were thought likely to comprise the entire industry when the crisis ended. ^{8/} At the end of 1994, the industry in fact consisted of 1755 institutions with \$750 billion in assets, slightly more than half the real value of assets in 1981. ^{9/}

^{5/} Before 1988, most estimates were in the range of \$30 to \$60 billion. Near the end of 1988, the government had already spent over \$40 billion, and the General Accounting Office (GAO) estimated that an additional \$80 billion would be needed over the next ten years. As recently as 1990, the Administration's estimate of total resolution costs, \$130 billion in 1990 dollars, was in line with the GAO's 1988 projection.

^{6/} See the CBO Testimony before the Senate Committee on Banking, Housing, and Urban Affairs (June 17, 1992).

^{7/} From 1980 to 1988, the FSLIC resolved 922 S&Ls. From 1989 through 1995, the RTC resolved another 747 institutions. See Kane (1989), p. 26 and RTC (1995).

^{8/} CBO Testimony before the Senate Committee on Banking, Housing, and Urban Affairs (June 17, 1992).

^{9/} See FDIC (1995).

The resolution cost figures presented above are several times larger than the net losses incurred by the S&L industry as a whole since 1980. The industry's losses in 1981 and 1982 totalled less than \$9 billion. The losses of the entire industry during 1987-90 amounted to less than \$31 billion. Outside these two periods the industry as a whole has turned in net profits. Thus, resolution costs for closing roughly one-third of the S&Ls that operated in 1980 have exceeded four times net industry losses.

The division of the S&L industry into profitable and financially troubled groups contributed to the large size of resolution costs compared with industry-wide losses. 10/ The split in the industry resulted from financial innovations that eroded many S&Ls' comparative advantage in their traditional business of providing small savings deposits, residential mortgages and small loans. Moreover, excessive risk taking stimulated by a permissive regulatory environment separated the industry into S&Ls whose risky lending paid off and those that lost the gamble.

Several recent studies have examined features of the U.S. regulatory environment that, in retrospect, magnified resolution costs for both banks and S&Ls during the past decade. Drawing on these studies' findings, the following section discusses three categories of regulatory response that increased the costs of the S&L bailout.

III. Regulatory Mistakes

In the 1980s, the S&L regulatory structure in the U.S. consisted of the Federal Home Loan Bank Board (FHLBB), the FSLIC, and 12 regional Federal Home Loan Banks (FHLBs). The FHLBB was in charge of chartering, regulating and supervising federal S&Ls and overseeing the FSLIC and the FHLBs. The FHLBs were a network of government controlled banks whose capital was provided by the S&Ls. The FSLIC insured S&L deposits and managed the assets and liabilities of insolvent S&Ls. The FHLBs examined S&Ls and issued bonds, using the proceeds to supply liquidity by lending or making advances at market rates to S&Ls.

At the onset of the S&L crisis in 1981, the FHLBB interpreted the existing regulatory statutes liberally to avoid the closure of many insolvent institutions. 11/ This policy of forbearance was based on the view that the 1980 and 1982 banking acts, economic recovery, and lower interest rates would

10/ Another reason for the high resolution-cost figures was presumably fraud. Abundant anecdotal evidence points to fraudulent behavior by the owners of many S&Ls in the 1980s, but the total magnitude of resolution costs attributable to fraud is not known.

11/ In fact, the regulators did not undertake extensive resolution action until 1988.

eventually help many S&Ls to regain solvency. Moreover, the FSLIC did not have sufficient resources to close all insolvent S&Ls; and asking the taxpayers to foot the bill was considered politically difficult. The policy of forbearance provided an opportunity for financially troubled S&Ls to continue their operations and to take on greater portfolio risk. ^{12/}

The incentives for greater risk-taking were accentuated by the capital-adequacy standards and the deposit insurance scheme of the early 1980s. Capital requirements were not risk-based and were liberalized in the early 1980s. Moreover, the FSLIC charged a flat insurance premium of 1/12 of 1 percent on S&L deposits despite the riskiness of their assets; and despite the sharp industry-wide increase in portfolio risk, the premium was not raised until 1985 when it rose to 5/24 of 1 percent. Many financially troubled S&Ls responded by offering higher than market interest rates on deposits, thereby attracting more funds, and investing in high-yield, high-risk assets such as junk bonds.

Besides reforms in the deposit-insurance scheme and capital-adequacy standards, the optimal regulatory response to excessive risk taking would have been tighter prudential supervision and closer monitoring of S&L assets. The FHLBs, however, lacked the personnel, notably S&L examiners, to improve monitoring. The laxness of prudential supervision was particularly acute because the 1980 and 1982 banking acts had significantly enhanced the S&Ls' ability to acquire assets that were more difficult for examiners to assess. ^{13/} In particular, S&Ls were granted greater investment powers in areas such as junk bonds, commercial loans, and direct real estate investments.

The regulatory strategy discussed above, forbearance and inadequate monitoring, allowed the S&Ls' net-worth deficits to grow before an intervention by the FSLIC. In addition, the resolution methods used in the 1980s magnified the insurance fund's losses at the post-takeover stage. We discuss these resolution methods below after summarizing some empirical findings on the costs of regulatory forbearance and inadequate monitoring.

^{12/} The FSLIC did resolve 922 S&Ls between 1980 and 1988; specifically, it resolved 247, 297, and 233 institutions in 1983, the period from 1983 to 1987, and 1988, respectively. Nevertheless, it left many insolvent institutions open and injected its own capital notes and other guarantees--liabilities of the FSLIC, these notes simply reflected the insolvency of the FSLIC itself and amounted to about \$40 billion in 1988. See Kane (1989a, 1989b).

^{13/} The Depository Institution Deregulation and Monetary Control Act of 1980 and the Garn - St. Germain Depository Institution Act of 1982 had several goals. The relevant goals in the present context were (1) removal of deposit interest ceilings to reverse a trend towards disintermediation and (2) greater investment powers for S&Ls to restore the industry's profitability.

1. The cost of forbearance

The policy of forbearance in the early 1980s was partly based on the hope that insolvent S&Ls would grow out of their net-worth deficits. Some S&Ls recovered under this policy of forbearance, but others continued operating long after their tangible capital had fully eroded. In 1981, for example, 112 S&Ls were tangibly insolvent according to estimates by the Congressional Budget Office (CBO). ^{14/} ^{15/} By 1982, sixteen of these S&Ls attained solvency, but the number of insolvent S&Ls stood at 415. About 345 S&Ls, solvent in book value terms, operating at the time of the CBO report in June 1991 had been tangibly insolvent at some point during the 1980s.

During the period that these 345 S&Ls recovered, however, over 1,600 others had ceased to exist. At the end of the period, nearly 300 other S&Ls were either under government conservatorship or were operating while insolvent, according to the book value of their tangible capital. Moreover, of the 345 institutions that did recover, about 70 percent continued to face severe financial problems and seemed highly likely to fail eventually, based on CBO projections.

The CBO study examines 1,130 S&L resolutions between 1980 and 1991, with the 1991 data based on projected resolutions. For the 1980-90 period, the study finds that it took an average of 38 months from the time an institution turned book-value insolvent to its closure and resolution. The CBO estimates that the delay more than doubled the resolution costs, which it calculated at \$127 billion in 1990 dollars. In comparison, the estimated cost savings associated with institutions that regained solvency during regulatory delays was small, about \$1.5 billion.

A standard method, discussed in Section IV below, for assessing the cost of slow resolution is to compare the growth rate of the net-worth deficit to cost of funds. For the failed S&Ls studied, the CBO claims that real resolution costs grew at an average annual rate of 37 percent between the time that the institutions first became book-value insolvent and the time that they were closed and resolved by the federal regulators. The median annual increase in costs was 51 percent. ^{16/} Because these figures were well above interest rates on government bonds, the CBO study concludes that the delays, averaging 38 months, in

^{14/} A bank is said to be tangibly insolvent when the value of its assets, excluding good will, falls short of the value of its liabilities.

^{15/} See CBO Staff Memorandum, "The Cost of Forbearance During the Thrift Crisis," June 1991.

^{16/} The CBO's ex post estimates of the growth rate of resolution costs (37 or 51 percent per year) are substantially above the FSLIC's ex ante estimates. For the last year of its operation in 1988, for example, the FSLIC had estimated the annual growth rate of the net worth deficits of insolvent S&Ls at about 12 percent.

the closure of insolvent S&Ls contributed significantly to the magnitude of resolution costs. Some caution must be exercised in interpreting these figures, however. Net worth deterioration can be caused by the actions and investments of bank managers; but it can also be the result of asset deterioration, i.e., existing assets turning bad. Only the former matters for the timeliness of resolution. The CBO study claims that much of the growth in negative worth was due to excessive risk-taking by bank management after the banks turned insolvent, but it does not say how much.

Delays in closing insolvent banks have also been blamed for some losses incurred by the government agency that provides deposit insurance to commercial banks, namely the Federal Deposit Insurance Corporation (FDIC). The FDIC itself has not been the target of as much criticism as the FSLIC. The lack of coordination between bank regulatory agencies, however, has been a subject of criticism. Specifically, a report by the House Banking Committee examined Federal Reserve (Fed) loans to financially troubled institutions that had access to the discount window. ^{17/} The study finds that 90 percent of all institutions receiving Extended Credit from the Fed's discount window between January 1985 and May 1991 subsequently failed. Moreover, during this period, the Fed routinely extended credit to CAMEL-5 rated institutions. ^{18/}

The CAMEL-5 institutions receiving discount window loans remained open for an average period of 10 to 12 months. Because discount window loans are fully collateralized by high-quality assets, the Fed did not absorb any losses resulting from subsequent failures. The study concludes that the discount-window loans delayed the closure of nonviable institutions and ultimately escalated the operating losses eventually covered by the FDIC. Partly in response to this criticism, the Fed discontinued loans to CAMEL-5 rated institutions in 1991.

2. Inadequate supervision of moral hazard

To address the moral-hazard problems associated with deposit insurance, the U.S. regulatory system relies mainly on prudential supervision. Ample anecdotal evidence suggests that lax supervision escalated the costs of the S&L bailout by allowing excessive risk-taking and outright fraud. Perhaps the most interesting systematic study of the issue, however, focuses on

^{17/} Committee on Banking, Finance and Urban Affairs, The U.S. House of Representatives, "An Analysis of Federal Reserve Discount Window Loans to Failed Institutions," June 1991.

^{18/} CAMEL-5 rated institutions are those that have the highest probability of failure based on the following performance standards: Capital adequacy, Asset quality, Management, Earnings and Liquidity.

banks rather than S&Ls. 19/ The study examines the FDIC's net losses--that is, resolution costs net of deposit insurance premiums--for the period January 1, 1986 through June 30, 1991. 20/ Net losses totalled \$12.4 billion over this period. The study provides a break-down of net losses according to the size of failed institutions and according to the regulatory agencies in charge of their supervision.

Smaller banks with assets below \$1 billion accounted for 75 percent of net losses. This share of net losses was disproportionately large: these banks held less than one-third of the assets held by all failed banks. At least 40 percent of the small banks' assets were not subject to annual on-site examination by federal or state regulators. In contrast, for larger banks with assets above \$1 billion, over 90 percent of assets were subject to annual on-site examination. The net losses attributed to these banks were smaller; they accounted for 25 percent of net losses, although they held over two-thirds of the total assets. The study interprets these findings as evidence that regular on-site examinations are effective in containing the insurance fund's net losses.

Another piece of evidence pointing in the same direction comes from the study's analysis of net losses by regulatory agencies. Compared to other Federal regulators, the Office of the Comptroller of the Currency (OCC), which supervises national banks, has put less emphasis on regular full-scope on site examinations since 1986. The study finds that banks regulated by OCC accounted for 73 percent of the insurance fund's net losses over the period beginning in 1986. Moreover, although the OCC had only 35 percent of the total assets of smaller banks under its supervision, small banks supervised by the OCC accounted for 53 percent of the net losses attributable to all failed small banks. More strikingly, the net losses attributed to the larger OCC-regulated banks amounted to 134 percent of the net losses attributed to all larger banks; the OCC net losses exceeded the total because larger banks regulated by the Fed contributed a net surplus to the insurance fund.

In contrast to the OCC, the Fed has heavily emphasized annual full-scope examinations of banks under its supervision. Over 97 percent of assets was under regular Fed examination during the period covered by the study. Total resolution costs for banks regulated by the Fed during this period fell short by \$1 billion of the total insurance premiums paid by these banks, yielding a net surplus to the FDIC. Although the study does not control for factors such as the regional distribution of banks supervised by the Fed, its apparent success is interpreted as further evidence that regular on-site supervision works.

19/ Staff Report to the Committee on Banking, Finance and Urban Affairs, The U.S. House of Representatives, "Analysis of Bank Deposit Insurance Fund Losses," September 1991.

20/ See House Banking Committee (1991).

3. Resolution methods

Several features of the FSLIC's pre-1988 resolution methods have attracted criticism. These methods often combined less desirable insolvent S&Ls in packages with more desirable ones. Potential investors were required to submit initial bids on these packages, without knowing which S&Ls were being marketed, how they were to be combined into groups, and what their true financial condition was. The bidding procedures were often non-competitive and there was heavy reliance on customized negotiations and sales. The most severe criticisms, however, have focused on the myopic nature of the FSLIC's evaluation of the costs of alternate resolution methods.

As Section IV below elaborates, a basic decision in the resolution process pertains to the choice between liquidation and assisted acquisition of the failed S&L. Typically, assisted acquisitions should have lower direct resolution costs than liquidation, perhaps because liquidation wipes out the failed institution's franchise value. When the bidding process for assisted acquisitions is not competitive, however, the insurance fund may be unable to recover the franchise value, and may make excessive financial-assistance payments to buyers.

The FSLIC lacked adequate funding for closing all insolvent S&Ls in the early 1980s. The FSLIC had reserves of \$6.3 billion in 1982, \$6.4 billion in 1983, \$5.6 billion in 1984, \$4.6 billion in 1985, -\$6.3 billion in 1986, and -\$13.7 billion in 1987. ^{21/} It could rely only on the inflow of minimal amounts in premia from the operating insured institutions. Actual cash outlays that required explicit financing did not begin seriously until 1985. In 1986, outlays were \$1.1 billion; in 1987, they were \$5.3 billion; and in 1988, they were \$11.3 billion. ^{22/} In 1987, Congress passed the Competitive Equality Banking Act, whose provisions authorized the FSLIC to borrow up to \$10.8 billion in maximum annual amounts of \$3.75 billion for additional FSLIC liquidity. The FSLIC established a subsidiary shell corporation called Financing Corporation, which solely marketed 30-year bonds to fund the S&L resolutions. The interest on the bonds was to be paid with regular and special assessments on the operating S&Ls, and the principal was backed with a zero coupon Treasury

^{21/} See Kane (1989b).

^{22/} See CBO (1992, p. xiii).

bond bought by the Federal Home Loan Banks. 23/

The lack of funding made the regulators reluctant to liquidate insolvent S&Ls or to keep a large fraction of their assets in the FSLIC's inventory. This reluctance accounts, at least in part, for the regulators' heavy reliance on assisted thrift acquisitions and injections of "capital notes" to boost regulatory capital, including in the packages a plethora of regulatory forbearance and asset guarantees as well as substantial tax benefits for the buyers of failed S&Ls. 24/ The provisions motivated the buyers to take over a larger fraction of the failed institutions' assets; thus, they reduced the inventory of assets held by the FSLIC and, thereby, the insurance fund's short-term financing needs.

In effect, however, the assisted acquisition packages of the 1980s substituted future payments on capital-loss and yield-maintenance guarantees or indirect payments through tax benefits for immediate resolution costs. The contingent and indirect nature of the payments created uncertainty about the timing and size of government costs, and made it more difficult for the FSLIC to compare the costs of liquidation and assisted acquisition.

Several observers suggest that the forgone tax revenues alone outweighed the long-term direct savings through preservation of franchise values in many assisted acquisitions under the FHLBB/FSLIC regime. Thus, with the benefit of

23/ See U.S. League of Savings Institutions (1989). Kane (1989b) points out that the Financing Corporation bonds were not explicitly guaranteed by the Treasury and served as a means of keeping this provision of liquidity to the FSLIC from appearing on the national debt as a taxpayer bailout. As of March, 1996, there were still \$8.6 billion of these bonds outstanding, and a dispute about whether the remaining S&Ls should still be assessed to pay for the interest had emerged. Because S&Ls are assessed 23 basis points per \$100 of deposits for deposit insurance from the new SAIF deposit insurance fund while their commercial bank competitors, whose separate insurance fund is fully paid up, paid only token insurance premia, S&Ls were at a competitive disadvantage. Healthy savings institutions thus are rapidly moving deposits to affiliates that are insured as commercial banks, so that the base against which this premium is charged is rapidly shrinking. Thus, there is an effort to charge commercial banks a premium to spread the interest cost of the Financing Corporation bonds. In this way, the temporizing funding methods that papered over the losses in 1987 have reemerged nine years later as a continuing loss that has yet to be allocated. See New York Times, March 20, 1996, p. D2.

24/ The total value of forgone tax revenues has not, to our knowledge, been estimated; but the "Southwest Plan" deals of 1988 alone granted billions of dollars worth of tax benefits to buyers.

hindsight, liquidation would have been a more cost-effective method of resolving these S&L failures. ^{25/} A highly publicized aspect of these tax benefits is colloquially called the "double dip." Tax provisions at the time enabled buyers to use the net operating losses and built-in deductions of the acquired S&Ls as tax shelters, without paying taxes on their associated financial-assistance receipts from the FSLIC. ^{26/}

In principle, the use of S&L acquisitions as tax shelters would not necessarily increase the total government costs arising from S&L failures. In a competitive auction, the buyers could adjust their bids to take account of any tax benefits. The widely held view, however, is that in practice the "double-dip" tax provisions magnified total government costs, presumably because the auction process was not fully competitive.

Moreover, many analysts argue that the resolution methods used by the FSLIC created moral-hazard and adverse-selection problems. The capital-loss and yield-maintenance agreements precluded any major risk shifting to the buyers and created a strong incentive for them to delay the sales of the assets under their management. The tax provisions made it more likely that the highest bidder in a S&L auction would be the potential buyer who could benefit most from the tax breaks, rather than from the failed institution's franchise value or potential synergies.

Ex post evaluations of FHLBB policies, particularly their application in 1988, have underscored the need for a "consolidated" approach to evaluating alternate resolution methods. ^{27/} This approach abandons the narrow focus on the immediate resolution costs faced by the insurance agency in favor of a broader perspective that aims to assess the full impact of alternate resolution methods on the present value of government liabilities. The consolidated approach is essential, in particular, for estimating the resolution costs of assisted acquisitions that grant significant tax benefits or asset guarantees to buyers.

A major reform of the U.S. regulatory structure in 1989 adopted the consolidated approach to evaluating the costs of

^{25/} See, Kormendi et al. (1989).

^{26/} The exclusion of financial assistance payments by FSLIC from the buyers' gross income originated in the Economic Recovery Tax Act of 1981. For a detailed discussion of applicable tax laws before and after 1989, see New York State Bar Association, Tax Section, Committee on Corporations, Report on Section 597 Proposed Regulations, December 1992.

^{27/} See Kormendi et al. (1989).

resolving S&L failures. ^{28/} The 1989 reforms also attempted to address the other regulatory "mistakes" of the FHLBB regime discussed above. The following section discusses the resolution policies adopted in 1989, and their application by the RTC.

IV. The Resolution Trust Corporation

The RTC, temporarily the world's largest financial institution, was established in August 1989 by the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA). Its function was to replace the FSLIC as the conservator and receiver of failed S&L institutions. The RTC was an organization with a limited expected life. It was assigned the task of closing insolvent S&Ls only through September 1993, at which point this responsibility was to be transferred to the FDIC. The RTC, however, continued until the end of 1995 to manage and sell the assets of the S&Ls taken over by September 1993. After 1995, the RTC was itself closed, with remaining unresolved issues turned over to the FDIC.

The primary stated objective of the RTC was to resolve failed S&Ls to minimize the loss to the taxpayers. Moreover, the disposition of assets was to be conducted in a way that limited the impact on local real estate and financial markets; and the agency was also required to pay attention to other goals, such as providing affordable housing to low-middle income families.

In designing its resolution strategy, the RTC attempted to avoid the shortcomings of earlier methods. Its program featured several new characteristics. First, it relied on a detailed set of directives and guidelines to its staff and the contractors that covered a wide range of operations, including asset management and disposition, contract policies, bidding procedures and marketing. ^{29/} It offered all transactions through a standard format in an open and competitive process requiring sealed bids. While prescribed and uniform procedures tended to restrict significantly the RTC's discretionary powers in handling individual cases, they also reduced the possibility of fraud, made policy and cost evaluation more transparent, and expedited the resolution process. They may also have increased participation: 70 percent of all cases involving 85 percent of all assets received at least two bids. Second, the RTC provided no regulatory forbearance and special tax benefits. Third, the

^{28/} With respect to tax benefits, the current objective of U.S. legislators and regulators is to fully neutralize any tax consequences of S&L acquisitions. For a discussion of the issues involved in this goal, see New York State Bar Association (1992).

^{29/} Due to the organizational, logistical and financial enormity of the resolution operation, the RTC relied mostly on private contractors to appraise, package, manage, and market its assets.

RTC offered asset putbacks that gave the buyers the option to return the assets to the RTC within one year of the time of acquisition, with the putback terms varying across assets. The put options limited the amount of risk faced by RTC to a pre-specified period, lowered up-front due diligence--that is, asset examination--costs, and expedited asset sales. Finally, other features of the RTC sales methods included: A "menu" driven approach to bidding so that a bid could have been on the whole S&L or standardized parts of it; help to the buyer to find financing; and extensive advertising.

Most prominent among the issues regarding resolution activities are those concerning the timing and the type of regulatory action. These two elements--when to act and what to do--are present in every step of the process of dealing with troubled financial institutions. Consequently, they play a major role in the determination of the ultimate cost of resolution. We discuss below the options available and constraints faced by the agency bearing the responsibility for intervention and also the advantages and disadvantages associated with each action at each stage.

1. To intervene or not

Since 1989, the Office of Thrift Supervision (OTS), which replaced the Federal Home Loan Bank Board, has been the primary regulator of federal and state S&L's and their holding companies. OTS is responsible for evaluating the financial health of thrifts and recommending resolution action to the RTC. When a thrift became book-value insolvent, the regulators faced two options, to act immediately or to defer intervention. If they chose to act, they also had to decide which method to pursue.

No action is taken. Two cases justify the choice of inaction for a failing bank. First, the insolvency may be transitory and therefore reversible. For instance, the financial deterioration of the bank may be due to correctable managerial errors or to adverse cyclical developments that may disappear with an improvement in the economic environment. Moreover, for the no-assistance strategy to make sense under these circumstances, the S&L should not face a serious cash shortage problem that could force it to engage in high cost fund raising activities.

Second, the insurance fund may face a liquidity constraint, that is, regulators lack sufficient resources to finance intervention activities. Action may be desirable but not feasible. Liquidity problems appear when the available deposit insurance funds are limited compared with the size of required intervention, and the government does not make up the difference, as in the FSLIC experience. Sometimes, the lack of appropriations is due to the underestimation of the severity of the problem. At other times, politics is the cause. Politicians connected with interest groups that benefit from the lack of resolution, such as bank managers, shareholders, or defaulting borrowers, may prevent or delay legislation to make funds

available for coping with the problem.

Action is taken. Regulators must decide the form of interventions that do occur. In an Open Thrift Assistance (OTA), an injection of sufficient cash is made to keep the failing thrift alive. The funds may have come from the FDIC agency that began to provide deposit insurance to the S&L industry as of 1995, the Savings Association Insurance Fund (SAIF). Alternatively, assistance might be funded through a transfer from RTC to SAIF. The motivation behind this strategy, modeled after the FDIC's Open Bank Assistance policy, is to save on resolution costs by helping the S&L regain solvency. In addition to the provision of funds, other regulatory measures are also taken.

The second method of intervention involved the take-over of the failing thrift by the RTC, a course typically pursued when the institution had no realistic chance of recovery. Once the thrift came under the management of the RTC, the decision process moved to the selection of the resolution method.

2. An evaluation of the timeliness of initial intervention

If the RTC's resources were sufficient both to aid potential survivors with cash infusions and to resolve the nonviable insolvent institutions, the intervention strategy would dictate immediate action. In practice, however, the RTC itself faced a liquidity constraint that forced it to time its intervention to match the available funds. The decision to intervene or not was based on comparing the expected present value costs associated with current and delayed actions and the RTC budget constraint. If no action was taken, the current cost to the taxpayer was zero; but there would be future costs if the S&L did not recover.

To estimate accurately the cost of a lack of intervention requires knowledge of the factors that contribute to net worth deterioration. 30/ These factors are usually the outcome of

30/ The RTC estimated future resolution costs by calculating its expected liabilities for each institution that was identified by the OTS as a possible or probable resolution candidate. In general, the RTC's cost estimates represented the total of negative capital, operating losses through the expected date of resolution and losses on assets sales. The calculation of losses on asset sales for probable resolutions was based on certain assumptions such as that 1 to 5 percent of the unresolved S&L's performing loans would become delinquent before the date of the RTC takeover. The loss rates on assets were based on asset reviews and differed both across various asset categories and regions. For example, performing 1-4 unit residential mortgages were assigned a 5 to 11 percent loss rate while delinquent commercial loans were assigned loss rates ranging from 53 to
(continued...)

costly current thrift practices that arise from the objective to satisfy immediate cash needs; or they result from the particular investment strategies pursued by troubled thrifts. The most important ones are the following. 31/

Borrowing at unfavorable terms to cover operating losses Financially distressed institutions have often resorted to offering above-market premia on deposits to obtain the funds needed for financing ongoing interest expenses. This strategy was used extensively throughout the 1980s and contributed significantly to excessive growth of liabilities and the severity of the S&L crisis. However, there was no increase in the net deficit if the liabilities created paid market interest rates.

Asset sales below market prices To improve its liquidity, a troubled S&L may engage in asset sales at values below fair market prices. While this practice provides temporary relief to a cash-strapped bank, it also increases the present value of the net deficit.

Risky asset purchases It is well known that S&Ls have an incentive to finance excessively risky projects if their deposit insurance premia do not depend on the riskiness of their assets. While the expected private return to any investment project is positively related to the degree of its riskiness, the cost borne by the S&L does not adjust similarly. As a result, the expected private rate of return on an investment can be positive and substantial even when the expected return would have been negative if deposit insurance were not available or if deposit insurance premia were weighted for risk. The criterion for determining whether any investment contributes to excessive deterioration in net worth is simple: expected net worth worsens excessively when the expected rate of return that is calculated taking into account the loss to the insurer plus operating costs falls short of the deposit rate.

The regulators may attempt to limit excessive growth in negative net worth by restricting the institution's ability to undertake any of the activities outlined above. However, the simple prohibition of some of these practices, such as borrowing at rates exceeding market rates, cannot be pursued without supplementary measures involving financial assistance. When excessive balance sheet growth arises because banks are forced to meet their liquidity requirements by borrowing at premium rates or by dumping assets, those banks will be forced to close if they are not allowed to raise the required funds. If the regulators aim at minimizing resolution costs and simultaneously want neither to take the bank over nor to force it to discontinue operation, they have only one option available. They must use

30(...continued)

77 percent. The RTC also calculated additional measures of asset loss rates based on the historical experience of the FDIC and the FSLIC.

31/ See Kormendi et al, 1989.

open thrift assistance for supplying low cost funds to the banks. Thrift assistance does better under these circumstances than no intervention at all, even when the assisted bank is likely eventually to fail. Under deposit insurance, the expected liabilities of the government increase at the rate paid on bank deposits. If this rate is higher than the rate on public funds, assistance leads to lower present resolution costs.

If the main source of deficit growth is excessive risk taking, either the introduction of regulation prohibiting such practices or direct intervention in the management is the appropriate regulatory response. Unlike the other sources of deficit growth that did not require the prohibition of particular activities, explicit controls are now needed because OTA by itself does not remove the incentive to finance high risk projects.

Even by 1992 under the new regulatory regime, the number of troubled S&Ls was still substantial. Of 1,885 then existing S&Ls, two hundred were listed as troubled at the end of 1992 by OTS. The number decreased from the previous year because 59 insolvent institutions were seized by the government and 77 bounced back and were removed from the list. Optimistic conclusions regarding the success from the lack of intervention should not be quickly drawn, however. Most of the recovery can be attributed to the unusually favorable interest rate spreads experienced in the early 1990s. The difference between the rates that S&Ls paid for their funds and the interest earned on their lending expanded to more than three percentage points during 1992. Because such differentials were unlikely to prevail in the long run, many solvent S&Ls later lapsed into positions of negative net worth, with resolution between 1993 and 1995. Consequently, the apparent success of limited current intervention should not be used as an argument to resume a "let them grow out of their problems" policy. Nevertheless, the expectation of a less favorable financial environment in the future does not automatically lead to a recommendation for more immediate action. If troubled institutions have positive profits, or experience a path of losses that is not steeper than the rate of interest, there are no immediate costs to delaying intervention.

3. The method of intervention

When the responsible banking agency decides to commit resources to an insolvent S&L, it also must determine the order and type of intervention activities. It can inject cash via Open Thrift Assistance in the expectation of recuperation and eventual viability. If there is no hope of recovery, the thrift is targeted for resolution. Resolution involved either the RTC's taking over the thrift and placing it in receivership or conservatorship or disposing of it by assignment to the RTC Accelerated Resolution Program (ARP).

In a receivership, the S&L was liquidated immediately without the solicitation of any bids. In a conservatorship, it

received the cash that it needed to fund its operations and came under the management of an agent appointed by the RTC. The resolution process was then started: due diligence, that is, asset examination, was performed, attempts were made to downsize the S&L and reduce its risk exposure, and the marketing process was initiated. Strict regulations guided the permissible activities of the conserved S&Ls regarding both asset and liability management.

The ARP was much like a conservatorship except that the S&L was kept open and marketed before it came under RTC management. During the marketing period the OTS closely monitored operations. Once a buyer was found, the bank was closed and sold.

a. Open thrift assistance

While thrift assistance can at times minimize the burden to the taxpayer, it may also have some side effects. First, if the bank managers and shareholders know that they will be unconditionally bailed out by the government in case of temporary insolvency, they have little incentive to act in ways consistent with the continuous maintenance of solvency. To cope with this problem the RTC tried to administer OTA so that neither the management nor the bank equity holders benefited from it.

The second side effect occurs because OTA funds are essentially a subsidy and can thus create a competitive advantage for "low" quality S&Ls. While unassisted S&Ls have to compete for deposits and loans at market rates, the assisted S&Ls may be able to expand their operations with low cost funds obtained from the government. Thus, OTA can undermine the position of the healthy institutions.

The RTC displayed great reluctance to providing relief to troubled institutions. To do so it required strong evidence that assistance would result in cost savings and long term viability. Not surprisingly, it was not involved in an OTA.

b. The types of resolution methods

A resolution of a failed S&L takes the form of liquidation or assisted acquisition. Liquidation involves either a deposit payout or a deposit transfer to another bank. Under the Insured Deposit Payoff, the RTC paid directly to depositors their insured deposits and retained all the assets of the S&L. Under the Insured Deposit Transfer, the buyers establish accounts on their books for the insured deposits of the failed institution; and in exchange they receive cash equal to the difference between the value of the liabilities assumed and the premium bid for the franchise value of the deposits.

In an assisted acquisition (Purchase and Assumption Transaction, P&A), the buyer assumes the deposit liabilities, either all deposits or only insured deposits, and purchases part of the assets of the S&L. The assets that are not transferred to the buyer are placed in receivership and marketed separately.

P&As can be structured in several ways giving the interested buyers several bidding options on both the asset and the liability side. The bidding options are described in greater detail in the Appendix. 32/

c. The optimal choice of resolution method

The possible resolution strategies are immediate liquidation, immediate sale, postponed liquidation, and postponed sale. The latter two take place after the placement of the S&L in conservatorship. The characteristics of the optimal action were based on the existence of a liquidity constraint in RTC operations and the comparison of costs of alternate strategies.

Liquidation was always accompanied by a greater outlay of RTC funds in the short run because it required the immediate compensation of insured depositors, and no revenue arose immediately from asset sales. An immediate S&L sale was also expensive in the short run because the RTC had to make cash payments to the buyer to cover the deposit liabilities that it transferred. Nonetheless, it was less expensive than liquidation because the buyer paid a premium for the failed S&L's deposits and purchased some assets.

Case 1: The RTC faces no liquidity constraint

Without a liquidity constraint, the estimated relative present value costs are the only determinants of the optimal resolution method. When the institution's franchise value is not sufficient to compensate for the cost of acquisition transactions, the S&L ought to be liquidated. 33/

The best time for liquidation depended on the anticipated path of deficits. If the negative net worth of the institution

32/ Additionally, when an institution was offered on a "break up" option, there was usually a Core Branch transaction for the largest home office segment and a Limited Branch transaction for the various other pieces.

33/ Nevertheless, an exception to this truism arises from a more general perspective that accounts for the interdependence of S&L transactions. It was possible that the liquidation of a S&L might have enhanced the franchise value of other RTC S&Ls by reducing the number of institutions that were offered for sale. This seems particularly relevant when failures were geographically concentrated. For instance, more than 20 percent--137 out of 653--of all resolutions occurred in Texas by 1993. It may have been optimal to "sacrifice" banks that would, in isolation, have commanded a transfer premium. This approach can generate arbitrary wealth transfer effects, benefiting the creditors of the S&Ls whose franchise value increases at the expense of the creditors of the sacrificed ones.

inclusive of RTC management costs increased at the rate of interest faced by the government, the timing was indeterminate and the RTC ought to have been indifferent between immediate and delayed receivership. In such a case, prompt disposition may have been favored if there existed a resolution deadline or when there were increasing returns to scale to disposing assets. Delayed liquidation may have been favored when the management and sale of receivership assets became harder as their stock increased. On the other hand, if negative net worth increased faster than the interest rate, prompt disposition had to be pursued.

If the thrift had a sizeable franchise value, it could have been either sold immediately through an ARP transaction or placed in conservatorship and prepared for sale. The deciding factor should have been whether conservatorship eroded significantly the franchise value of the institution. The ARP was introduced because in practice franchise value declined fast even when the thrifts were marketed promptly. An additional factor was the human capital constraint faced by the RTC. Expedited sales may have been pursued simply because the agency did not have the specialized employees required to manage many institutions simultaneously. 34/

Placing S&Ls in conservatorship was favored when careful preparation for sale might have led to larger sales revenues. Higher revenues may have arisen for two reasons. First, during conservatorship, due diligence was done by both the RTC and interested bidders. The opportunity to take a closer look at the state of the resolved S&L before marketing allowed the RTC to calculate the market value of the assets more accurately and avoid systematic underpricing. Similarly, giving the prospective bidders the opportunity for extended due diligence may have increased buyer interest and participation in the sale process and lowered risk premia incorporated in the form of discounts on bidding prices. Second, conservatorship gave the RTC the chance to combine several failed S&Ls and offer them as a package to

34/ Especially scarce were individuals familiar with bank management and who could implement RTC policies and procedures; this was identified as a serious problem at a time that the RTC held hundreds of S&Ls in its conservatorship program.

increase bidder interest. 35/

Case 2: The RTC faces a funding constraint

When the RTC operated under a liquidity constraint, it could not select freely its intervention method. For instance, liquidations may have been employed more sparingly than wanted. Institutions may have stayed longer in conservatorships even when the rate of net worth deterioration exceeded the interest rate. The speed of disposition of assets in receiverships may have been accelerated for generating funds for subsequent dispositions. Sales methods also were affected; for instance, financing may not have been offered to the buyers of real estate properties. These forced actions could have resulted in lower RTC revenues and higher ultimate resolution costs.

The major problem faced by the RTC was how to design an optimal prioritization system for disposing of terminally ill, insolvent S&Ls in the presence of a binding resource constraint. In the early stages of its operation, the RTC followed a simple rule. All thrifts taken over were placed in conservatorship first. They were then assigned a resolution priority based on the institution's franchise value, size, location, rate of operating loss and length of time in the conservatorship program. Subsequently, they were marketed in an order reflecting their priority number.

Chief among these factors in deciding the order of disposition was the rate of deterioration in net worth. Interestingly, the RTC would not put a thrift up for sale unless it had a relatively high rate of deterioration, even in cases in which there was strong investor buyer interest. Later policies added considerable flexibility to the original prioritization system. With the ARP, the RTC attempted to sell S&Ls likely to fail and marketable independently of their rate of capital deficit growth. A similar approach was used with regard to marketable conservatorships.

The main justification offered for the switch in S&L sales priorities was that prompt sale could save taxpayer money by preserving the franchise value of the institution. Nonetheless, if the cost of the resolution was the ultimate criterion for

35/ Finally, resolution methods could affect classes of depositors differently. For instance, the uninsured depositors suffer a loss when a S&L is liquidated but may be spared in the case of an assisted acquisition involving the sale of all deposits. In evaluating bids, the RTC was required by law to select the deposit sale method that minimized the cost to the taxpayer. Given that the fraction of uninsured deposits in seized S&Ls was about 0.4 percent, this issue was not practically important. Also, because bidders were allowed to submit separate bids for all and insured only deposits, it was not difficult to select the cost minimizing transaction.

rationing limited resources among competing uses, the RTC had to take into account both the rate of franchise value erosion and the rate of net worth deterioration.

V. Asset Management and Sales

In addition to the cost minimization and expeditious disposition objectives, the RTC was also supposed to structure and time its asset sales to minimize any impact on local real estate and financial markets. These objectives were not consistent with each another; so, the RTC had to find an acceptable trade-off. Below, we discuss the main elements of the RTC asset management and sales program: the implications of sales methods for speed of disposition and for RTC revenue and risk exposure, asset pricing policies, and the potential for adverse effects on local markets.

The RTC's Asset Management and Disposition Manual and Contract Policies and Procedures Manual specified detailed procedures for contracting private-sector specialists to manage and sell the assets of failed S&Ls. Some asset-management activities, such as servicing performing loans for which a quick disposition was anticipated, were done by either the RTC staff or contractors. Other activities, such as handling non-performing loans, were performed by contractors under a Standard Asset Management and Disposition Agreement (SAMDA). In later stages of the liquidation, as we elaborate below, the RTC's asset-disposition activities relied less heavily on retail sales through the SAMDA program and increasingly on bulk sales and securitization.

1. SAMDA Contracts

SAMDA contractors were hired by the RTC to manage and dispose of pools of non-performing assets; the SAMDA program was not designed for performing assets. Although private-sector contractors handled most of the asset-management and disposition activities, a primary responsibility of the RTC staff was to monitor these activities and to set performance standards for the contractors. SAMDA contracts with total fees over \$5000 had to be awarded on the basis of a pre-specified competitive bidding procedure, except under unusual circumstances.

Before bidding, the RTC grouped together a marketing and management portfolio of assets. To the extent possible, each portfolio consisted of assets with common management requirements--e.g., assets with similar problems, or assets in a common market. The RTC provided an Estimated Recovery Value (ERV) and other pertinent information for each asset in the SAMDA pool. Based on this information, prospective SAMDA contractors submitted to the RTC their proposals for managing and disposing of the assets. The initial ERV of the SAMDA pool set a performance target for the successful bidder. The contractor's management fees, however, were adjusted on a pro rata basis as the ERV of the SAMDA pool changed over time.

From its inception to the end of 1992, the SAMDA program's sales and collections totalled \$11.9 billion. At the end of 1992, the number of ongoing SAMDA contracts was 168, and the number of different contractors was 92. These contractors had assets with a total book value of \$19.2 billion under their management. Both the number of contracts and the value of assets in the SAMDA program dropped during 1993 to 70 contracts with assets of only \$3.2 billion in total book value by the end of the year.

2. Asset sales

a. Methods

The RTC used a variety of methods for selling its assets: individual sale, portfolio sale, auction and sealed bid. In an individual sale the RTC offered an individual asset, usually a piece of real estate, on the open market for a minimum period at a pre-specified list price. In a portfolio sale the RTC packaged various assets for sale as one unit, which gave the RTC the opportunity to increase the size of its offerings to attract larger buyers and lower overhead costs. As a disadvantage, the grouped assets tended to have similar characteristics, so the bundling of assets did not reduce risk through diversification. This could have resulted in a higher price discount than in smaller sales. Moreover, due to their size, portfolio sales discouraged the participation of small investors.

Auctions were used often by the RTC. Their main advantage was to allow the RTC to market many assets simultaneously and sell them quickly, resulting in lower overhead costs.

b. Options on assets

In the early phase of RTC operation, prospective buyers interested in acquiring a significant part of S&L assets had to undertake a detailed, lengthy "due diligence" review before the submission of a bid. The review process for disposed S&Ls could be time consuming, especially when the number of potential bidders was large and the institution offered was sizeable. The resolution process was consequently slowed considerably and participation in the bidding process was discouraged. Nevertheless, the process rarely resulted in the purchase of a substantial quantity of assets by the buyer.

To eliminate the need for extended due diligence before the sale, the RTC changed its sales policy in the Spring of 1990. The main feature of the new program was to allow extended and extensive put and call options after the completion of a sale. The new policy was applied to purchase and assumption transactions involving mostly large institutions. Typically, cash, investment grade securities, first mortgage loans to one-to-four family residences, multi-family residence loans and consumer loans were acquired by buyers on the closing date. The buyers were also offered substantial put options on most types of assets purchased and exclusive call options on the unsold

assets of the institution. ^{36/} The terms for these putbacks varied across different categories of assets; and usually they allowed an asset or groups of assets to be returned within one year after the initial sale. The strike or repurchase price for puts was usually the purchase price plus interest while that for calls was a set fraction of appraised value. For example, non-performing loans could be called for 60 days after the delivery of an appraisal at 95 percent of the appraised value of the collateral.

The outright sale of an asset eliminated the RTC's risk exposure. This was no longer true in the presence of putback provisions. Consequently, the main disadvantage of these options was that they kept the RTC exposed to risk long after the completion of a sale. Nevertheless, the put options resulted in higher revenues because of the insurance to the private investors. In the case of the exclusive call options, the RTC could not market or sell callable assets before the expiration of the options even if it received a better offer from other investors.

Table 1 reports resolution sales and asset putbacks from the inception of the RTC through the end of 1992. Thirty-three percent of all assets sold were returned to the RTC; and the putback rate was an decreasing function of the quality of the assets, ranging from 2.5 percent for securities to 75 percent for REOs.

c. Securitization

Shortly after its inception, the RTC assumed the ownership of almost \$200 billion of mortgages previously held by the failed S&Ls and about \$30 billion of other loans. It had several methods available to deal with these assets: ^{37/}

Hold the mortgages The net benefit of holding mortgages was equal to the revenues collected minus the costs of holding. The latter include losses arising from defaults, the fees to loan servicers and interest paid for the funds used to acquire the mortgages.

The main shortcoming of this strategy was that it left the agency with a long-term equity position in the assets of the failed institutions. Consequently, it exposed the taxpayers to long term risk. In addition, the RTC was a short-lived entity that was directed by its Oversight Board to move assets off its books as soon as possible. While a speedy disposition of seized assets was not included explicitly in any of the FIRREA provisions, it was accepted as an additional objective in the S&L clean up operation.

Sell the mortgages as whole loans In a whole loan sale

^{36/} See the Appendix for a more detailed description.

^{37/} See CBO staff memorandum, June 1991.

transaction, the RTC transferred ownership of the asset to private investors who assumed the associated credit risk. A small portion of risk was temporarily retained by the RTC because of representation and warranties provisions associated with the accuracy of information supplied to the buyer by the RTC. The sale price was typically smaller than the remaining balance on the mortgages because of the probability of default.

Securitize the loans Whole loan sales were the exclusive vehicle for disposing of mortgages until June 1991, when the RTC engaged in its first securitized loan transaction. ^{38/} From that time, it designated the latter as its "primary and priority" method of sale. Within a year, it had sold \$20 billion worth of mortgages in 45 transactions.

The RTC securitized mortgages by forming a pool from loans of a particular type (e.g., 1-4 residential, adjustable rate loans). The pool was transferred to a trust fund that issued pass-through certificates collateralized by the underlying portfolio of mortgages. When the securities were offered on the market, the RTC pledged a fixed proportion of their value to a reserve fund. The amount pledged depended on the type of underlying asset and determined the credit rating of the securities issued. For instance, it was 13.05 percent for AA rated 1-4 family mortgages, 19.74 percent for AAA rated 1-4 family mortgages, and 28.32 percent for AA rated 5+ family mortgages. The role of the reserve fund was to protect the buyers of the certificates from any losses that might arise due to defaults or delinquencies on the underlying assets; the establishment of the fund was set specifically by the credit rating agencies as a condition for achieving enhanced credit ratings.

An evaluation of the alternate loan sale methods

RTC estimates for the expected losses on the underlying assets suggest that the existence of a sizeable reserve fund left the purchasers with very little credit risk. ^{39/} Securitization then did not really represent a sale of equity because the RTC retained most of the risk. Consequently, comparison of the outright sale and securitized sale options

^{38/} Securitization in this context means the creation of a marketable asset or security representing a claim to a stream of future payments that are either supported or secured by a pool of illiquid assets. Private financial intermediaries have made extensive use of securitization to reduce the cost of funds and diversify credit risk.

^{39/} The RTC estimated that about 20 percent of the reserve fund would be used to cover losses on the underlying assets. According to the Resolution Trust Reporter, private sector estimates of the losses are between one third to one half of the reserve fund.

requires an adjustment to account for this difference. Alternatively, the comparison would be immediate if the RTC sold its equity position in the reserve fund so that both options involved the same amount of risk.

The reported revenue gains from securitization, \$1.4 billion for the first year of its operation, excluded the possible losses from the reserve fund and thus were exaggerated. Still, one can offer the following argument in favor of securitization. Many assets held by the RTC lacked proper documentation because many came from troubled thrifts with poor oversight and record keeping or fraudulent management. If the loans were sold before the loan records were cleaned up and restored, there would have been significant uncertainty regarding their performance, which would have required the RTC to offer a steep discount on their prices. Securitized sales backed with a reserve fund eliminate the need for either keeping the loans away from the market until the uncertainty about their characteristics has been resolved or for selling them at a price incorporating a substantial discount for risk. To provide insurance to private investors through the reserve fund, the RTC required higher sales prices. 40/

Securitizing loans rather than holding them to maturity is less favorable from an expected revenue point of view. If the RTC had held the mortgages and financed them by borrowing through the Federal Financing Bank (FFB), its funding cost would have been equal to the Treasury bond rate plus 1/8 of one percent. Its revenue stream would have equalled the income from the mortgages. If, on the other hand, the RTC securitized its loans and set up a reserve fund, it financed its mortgage holdings by borrowing from the purchasers of the securities. The rate paid on the loans was always higher than that paid by the FFB, a differential of about 100 basis points. The system of securitization involved smaller RTC risk exposure than the alternative of holding the assets because of the fractional reserve fund, but this type of insurance would be valuable only if an unprecedented wave of defaults occurred.

d. Seller financing, cash flow mortgages

To induce higher buyer interest, the RTC offered seller financing on residential, commercial and land real estate assets. The mortgages were normally relatively short-term (five to seven years) at rates comparable to related market rates. Except for the affordable housing program, there was a minimum transaction size requirement of \$100,000.

Of particular interest were cash flow mortgages for real estate portfolios, mainly for those that were the hardest to sell. Under this arrangement, the buyers make down payments, set up escrow accounts with funds designated for the improvement or

40/ Taxpayers were made better off if they were less risk averse than private investors.

maintenance of the acquired properties, and service the loans with payments tied to the performance of the properties. Mortgage payments were based on income earned beyond that required to operate and maintain the properties. The investors were asked to take an equity position of 20 percent but the actual cash received by the RTC in these transactions was as low as 5 percent, with the remainder placed in the escrow accounts. In recognition of the low marketability of these assets, the RTC deviated from its "no customized, no individual negotiation" sales policy by tailoring and negotiating portfolios to individual needs.

The cash flow mortgages faced strong criticism for two reasons. First, the actual amount of cash down payment surrendered to the RTC was very small. Nevertheless, many of these properties could not become performing unless there was a substantial infusion of funds for capital improvements. Moreover, the investors' equity stake was the same, whether it occurred through a cash down payment to the RTC or through the placement of funds in the escrow account; therefore, their incentive in managing the property was also the same. Second, contingent payments exposed the RTC to an additional source of risk.

3. Effect on local markets

To assess the impact of RTC action on local real estate markets, it was necessary to determine first whether RTC asset holdings were substantial enough to influence the conditions in local markets. Second, was the RTC's sales program conducted to minimize the impact on local prices?

Due to the regional concentration of the S&L crisis, the RTC did have the capacity to depress significantly certain local real estate prices. For instance, a study by Vandell and Riddiough (1990) found that in certain sub-markets in the metropolitan area of Dallas, RTC real estate holdings represented more than one-third of total stock. The ability to influence markets was also present in the market for securitized mortgage pools where the RTC was the dominant player.

In its marketing strategy, the RTC could have structured the timing, quantity, type of asset sales, and pricing strategy to a) receive the highest possible income stream from asset sales on a particular market or b) avoid inducing large gyrations in the prices faced by other sellers. These two motivations were often in conflict and could lead to different sales patterns and revenues because, in the latter case, the RTC had to take into account the external effects of its actions on other market participants. The conflict was exacerbated because the pace of asset sales had to be fast enough to convince Congress about the RTC's effectiveness. For instance, consider a group of properties in a market that experiences decreasing prices. Under (a), the optimal strategy was to sell immediately; while under (b), the optimal policy may have been to keep the properties off the market to avoid causing further price deterioration.

As a device to detect market impacts, the RTC constructed an index of market distress. The index for a given area was based on the size of RTC Real Estate Owned and Real Estate Loans as a percentage of Real Estate Assets held by commercial banks and thrift institutions in the area, the percentage change in the number of permits issued for construction, the percentage change in the dollar value of permits issued for commercial construction, and the unemployment rate. It was not clear, however, how the RTC used this index in designing its real estate marketing strategy and in particular how much attention it actually paid to either of the conflicting objectives. There were accusations and anecdotal evidence that the agency's actual selling strategy was to sell as much as possible whenever possible, which would have been inconsistent with both (a) and (b); but there existed no hard evidence suggesting the occurrence of asset dumping or "fire sales."

The existence of price floors close to appraised market value, as discussed in section V.4, can prevent asset dumping, in theory. Nevertheless, the price floors were reduced over time, and deviated significantly from appraised value. Also, appraisals were very conservative, which resulted in low list prices. For instance, it has been reported that properties disposed as part of the Southwest Plan in Dallas sold for 120 to 130 percent of appraised values. 41/

Another factor that might have contributed to "unfairly" adverse effects on other sellers was the provision of generous RTC financing. Although the RTC was initially supposed to offer seller financing only sparingly and to require substantial down payments of at least 25 percent, it eventually used seller financing extensively with terms regarded as too generous.

4. Asset pricing

The RTC set prices based on estimated market values. For standardized assets traded in organized markets, the market value was directly observable. For others, such as loans and real estate, the price was calculated through the Asset Valuation Review process. During this review, assets were divided into separate categories; and a sample was then taken for each category. A liquidation value was estimated based on the review of the characteristics of the assets and any relevant information

41/ See Vandell and Riddiough (1990).

from related sales. ^{42/} The recovery rate, calculated as the ratio of the market value to book value on the sampled assets was then used to decide the market value of the assets in each category that were not part of the sample.

For real estate, the RTC pricing policy was almost deterministic. The RTC imposed a price floor as a percentage of the appraised market value. The limits depended on the time that the asset had been on the market: 80 percent of appraised value for the first six months, 60 percent for the subsequent twelve months, and 50 percent for the following six months. If the asset had not been sold within two years of its first being offered, there was a new appraisal.

This deterministic price policy was criticized for slowing the pace of disposition and resulting in lower prices because investors supposedly had an incentive to wait until the process reached a later stage. This could have occurred if the buyers colluded, but then other pricing schemes would have been as susceptible to buyer manipulation as this Dutch auction scheme.

5. Estimating recovery rates

The true value of assets held in receivership cannot be determined until the assets have been actually sold. Nevertheless, the RTC estimated asset recovery value to determine the loan loss reserve for financial reporting purposes, to design asset disposition strategies, to estimate working capital borrowing requirements, and to evaluate the size of future resolution costs and the ultimate expected cost to the taxpayer. In such an examination process, exaggerated recovery rates underestimate resolution costs and may consequently cause funding shortages that can slow the resolution pace. Unduly pessimistic estimates, on the other hand, may push estimated costs to high levels. This could have triggered an adverse reaction from Congress and the public, an event that could have affected the optimal resolution strategy.

An underestimation of recovery values might have led to insufficient short term funding because the RTC was allowed to borrow working capital for only up to 80 percent of the estimated asset value. Moreover, inaccurate recovery evaluations might have resulted in either delays in disposition of assets if list reservation prices were set too high or revenue losses if list

^{42/} The existence of extensive information systems was of critical importance for the success of the asset pricing, management, marketing and disposition processes. The RTC has developed five asset management systems: the Securities Portfolio Management System, an Asset Manager System, a Loans and Other Assets Inventory System, a Real Estate Management System, and the Furniture, Fixtures and Equipment System. The wealth of information available on these systems was extremely valuable in performing asset valuation.

prices were set too low. Both miscalculations could contribute to higher resolution costs. The latter might also have created political difficulties for the RTC as it was likely to be accused of asset "dumping."

Due to the size of the RTC portfolio, it was not practical to estimate recovery values for each individual asset. Instead, the RTC used standard statistical techniques to select a sample. The recovery value for each selected asset was then calculated, and based on this information, the RTC constructed a weighted average recovery rate for different asset categories within the sample. 43/ For example, the calculated recovery rates for 1991 were 87 percent of book value for performing mortgages on residential 1-4 units; 61 percent for delinquent consumer loans; and 39 percent for real estate owned. The sample average recovery rate for each type was then projected to the entire population of RTC assets of that type.

The success of the valuation process was judged by the discrepancy of estimated and actual values of assets sold, both for sampled and population assets. According to a General Accounting Office (GAO) report, 44/ the RTC may have overstated market values during the first year of its operation but it subsequently improved its sampling and valuation

43/ The process of estimating recovery values differed across assets. Assets with near term disposition periods--that is, sales expected within six months--usually required little if any formal cash flow analysis as they could be valued using current market information and recent RTC sales of similar assets. Those with longer expected disposition dates were more difficult to evaluate because of uncertainty regarding the preparation process, such as resolving legal disputes or making repairs. In general, asset valuation was based on both actual data for similar assets sold from receivership in the recent past and the information collected during the due diligence process. Once net cash flows had been estimated and reviewed using asset value information available in one of the RTC data bases, the indirect expenses were calculated over the projected asset holding period. The present value of the difference between these two was computed and divided by the book value to compute the recovery rate of the asset. The discount factor used in the calculation of present values depended on asset type. For example, the RTC guidelines recommended that for actively traded instruments and performing and conforming 1-4 family mortgages the corresponding market rate be used; for performing commercial loans the rate used was the prime rate plus 200 basis points. For non-performing commercial mortgages the 10-year U.S. Treasury Bond constant maturity index plus 600 basis points was used.

44/ "Obligations Limitation: Resolution Trust Corporation's Compliance as of March 31, 1990," GAO Report to the Chairman, House Committee on Banking, Finance, and Urban Affairs, House of Representatives (July 1990).

methodology and produced more accurate estimates. ^{45/} Inspection of sales data maintained by the RTC on its sampled assets reveals that the actual recovery rate on the individual sampled assets sold was close to the estimate. ^{46/}

VI. The RTC's Funding and Resolution Experience

1. Funding

The U.S. Treasury faced several possibilities for funding the activities of the RTC. As one possible course, it could have made an open-ended, permanent authorization of funds in an amount sufficient to complete the costs of S&L resolutions. The source of funds could have been Treasury appropriations financed by Treasury bonds. Alternatively, the government could have required the RTC to operate under a liquidity constraint, imposing restrictions on both the flows of appropriations and RTC borrowing. RTC borrowings could have come either in the form of Treasury bonds, of RTC bonds, or of bonds of another federal agency that would borrow on behalf of the RTC. The option selected involved the limited, periodic supply of Treasury funds, following reviews of the RTC's performance by Congress, together with permission to borrow up to a limit through two agencies. The Resolution Funding Corporation (REFCORP) was established specifically to borrow on behalf of the RTC; and the FFB also provided funds. ^{47/} The RTC could borrow working capital from the FFB at 85 percent of estimated fair market value of the assets it planned to sell.

The RTC relied on four sources for funding: Treasury appropriations, recoveries from receiverships, deposits in institutions in conservatorship, and borrowings through either REFCORP or the FFB. From its inception through November, 1995, the RTC had obtained \$103 billion of net funding from the government: \$50 billion in FIRREA appropriations (\$30.1 in

^{45/} On May 4, 1990, the RTC's management testified that it was considering accepting prices as low as 70 percent of appraised, or estimated fair market values.

^{46/} "Financial Audit: Resolution Trust Corporation's 1990 Financial Statements," GAO Report to the Congress (October 1991).

^{47/} REFCORP was established as an accounting trick to exclude its borrowings from the computed government budget deficit. See CBO (January, 1992), p. 12. As in the case of the FSLIC's Financing Corporation, the principal on REFCORP bonds was collateralized by the purchase of a 30 year zero coupon bond by the FHLB. The lack of a direct Treasury guarantee of principal meant that the bonds were not counted as part of the Treasury debt. Nevertheless, the Treasury guaranteed the interest on the bonds.

REFCORP borrowings, \$18.8 in Treasury funding and \$1.2 in FHLB contributions), \$41 billion in loss funds authorized by 1991 and 1993 Acts of Congress, and \$11.5 billion in FFB borrowings. 48/ The RTC also obtained \$82 billion in recoveries from receiverships.

The funds from the Treasury were authorized and released only gradually from 1989 through 1993. The main motivation for constraining RTC funding was to give the political authorities the opportunity to control the activities of the RTC. The shortcoming of this approach was that it often led to significant funding shortages, which in turn retarded the resolution process.

There was less justification for not providing working capital to the RTC through Treasury borrowing. REFCORP or FFB bonds paid up to 30 basis points more than the corresponding Treasury bonds; and therefore, they did not represent the least cost source of funds available for financing resolution activities.

2. The actual RTC resolution experience

From 1989 to the end of 1995, the RTC resolved 747 thrift institutions. 49/ Banks acquired 433 of the resolved institutions, other thrifts acquired 222 and the remaining 92 failures were handled through deposit payouts. Of the assets that had come under RTC management by January, 1995, 27 percent were in the form of cash and securities, 49 percent represented mortgages, while other loans and real estate holdings each represented about 7.5 percent. 50/ By the end of 1995, the RTC had recovered \$395 billion from sales and collections of assets with a book value of \$456 billion, a recovery rate of 87 percent. 51/ The recovery rate ranged from 98 percent for securities and 96 percent for 1-4 family mortgages to 55 percent for real estate, as shown in Table 2. The remaining unsold assets in the hands of the RTC amounted to about \$10 billion in November 1995.

Of the 747 resolved thrifts, 497 were purchase and assumption (P&As) transactions in which deposit liabilities and a portion of the assets were sold. 52/ Forty-one of P&As

48/ RTC Review, Vol. IV, No. 2 (February 1993), pp. 8-9.

49/ By August 31, 1993, the number of closed S&Ls had increased to 670, and 64 other institutions were in conservatorship in November, 1993. The FDIC had been scheduled to assume the task of resolving insolvent S&Ls from the RTC in September, 1993, but in a bill passed in November, 1993, Congress extended the RTC's time to manage resolutions until the first half of 1995.

50/ RTC Review, July 1995.

51/ RTC Review, December 1995.

52/ RTC, Statistical Abstract (1995), pp. 56-57.

involved an accelerated resolution (ARP). Another 158 were insured deposit transfers (IDTs) in which the acquiring institutions received a payment from the RTC to accept responsibility for deposit liabilities; and often, they also acquired some assets. The remaining 92 were insured deposit payoffs (POs) in which the RTC paid off the insured depositors and retained all the assets. In general, about 21 percent of assets was passed on to acquirers in these transactions, consisting mostly of securities and 1-4 family mortgages. The premia paid by buyers for assuming the deposit liabilities--that is the difference between the value of the deposits and what the government paid to buyers--were 2.45 percent of core deposits with balances below \$80,000 for P&As and 0.67 percent for IDTs.

VII. Conclusion

Among industrial economies, insolvency in a large segment of the financial sector is a phenomenon that occurred first in the U.S. during the 1980s. In the late 1980s, other industrial economies began to experience similar problems. Since the U.S. has already passed through the resolution process, its experience may be helpful for countries just entering the resolution phase of the problem. In measuring the relevance of the U.S. experience for other countries, remember that, as large as the S&L problem was, it affected only a fraction of the overall U.S. financial system. Because other, sound financial institutions remained as potential buyers, a strategy to liquidate institutions and assets was feasible. In countries where the entire banking and financial system is affected, liquidation may be infeasible in spite of this advantage. Nevertheless, in the first years of the U.S. crisis, a strategy was implemented to delay radical resolution by allowing the S&L industry to earn its way back to solvency. When costs to the taxpayer mounted rapidly, this policy was reversed to one of rapid liquidation of insolvent S&Ls through the programmed six-year trajectory of the RTC. This tension between the benefits of delay and the benefits of immediate resolution is always present when banking insolvencies strike on a large scale.

Once decided, a policy of liquidation immediately leads to the issue of who is to fund and liquidate the assets of the insolvent institutions. The U.S. opted to create the RTC as a temporary "bad bank" to centralize the assets in an agency devoted entirely to liquidation and whose own predetermined closure date locked in the pace of asset liquidation. For those who choose to follow this path, the RTC experience is most relevant.

Types of Transactions

The RTC used different types of P&A transactions involving variations on both the asset and liability side. 53/

I. Variations on Asset Sales

The assets that a buyer might potentially acquire might be divided into three groups. Some assets had to be acquired as part of the transaction; these included investment grade securities and government-backed securities. The buyer had an option to choose some assets but only at prices preset by the RTC. These assets had various putback rights but were sold without representations and warranties. Examples of such assets were consumer loans, residential and non-residential mortgage loans, and construction loans. Finally, some pools of 1-4 family unit residential first mortgage loans processed through due diligence could have been sold with extensive representation and warranties. There was no restriction on the bidding price for such assets, but the RTC retained the right to reject bids below the listed RTC Reserve Price.

II. Transaction Types

The RTC used several types of P&A transactions. The first two were used for sales of entire institutions, the third for individual branches or groups of branches, and the fourth for mortgages only.

1. Whole thrift P&A

The buyer received cash, high quality securities and various asset pools. No putback provisions were offered on these assets. The buyer also received exclusive options on the fixed assets of the thrift.

2. Standard P&A

This was similar to the Whole Thrift transaction except that various asset pools were offered as an option rather than as a required purchase.

3. Branch P&A

These had the same features as the Standard P&A, but they concerned deals only for branches of thrifts and not for headquarters.

4. Mortgage only transaction

The bidder could bid only on pools of 1-4 family residential

53/ See RTC Asset Management and Disposition Manual.

first mortgage loans. Unlike the other transactions described above, no deposit liabilities were bought under this transaction.

III. Options on Deposits

Under the Whole and Standard P&A, the buyer had the option of assuming either all the deposits or only the insured deposits. Under the Branch P&A the bidders had to submit bids for both all deposits and insured deposits. The latter policy arose from the requirement that all depositors in a single institution were to be treated equally across branches.

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Table 1. Putbacks

	Gross Sales	Putbacks
Securities	20,958	489
1-4 Mortgages	28,855	13,394
Other Mortgages	11,246	5,728
Other Loans	6,437	3,097
REO	201	153
Other assets	<u>1,344</u>	<u>801</u>
Total	69,013	23,661

Source: RTC Review

Table 2. Recovery Rates by Asset Type (from inception to end of 1995)

(In billions of dollars)

	Book Value	Amount Recovered	Recovery Rate
Cash/securities	162.88	159.38	0.98
1-4 Family mortgages	111.45	107.03	0.96
Other mortgages	76.75	57.23	0.75
Other loans	35.16	30.92	0.88
Real estate	30.94	17.03	0.55
Other assets	<u>38.66</u>	<u>23.73</u>	<u>0.61</u>
Total assets	455.84	395.31	0.87

Source: RTC Review, December, 1995.